

Developing Windows Applications with WPF

Course code: DOTNET_WPF

This course is designed for developers on the .Net platform who want to learn the techniques of programming WinForms and Windows Presentation Foundation (WPF) applications using Visual Studio.

Required input knowledge

- Experience with c # programming at GOC2125 level is assumed
- Development experience with Visual Studio
- Experience with object-oriented programming in C #
- Experience with LINQ technology

Teaching methods

- Expert explanation with practical examples, exercises on computers

Course syllabus

Module 1 Windows application and WPF

- Application architecture for Windows
- Interoperability between Windows Forms and WPF

Module 2 Introduction to Visual Studio and WPF

- Basics of creating WPF applications in Visual Studio
- Basic elements of a common WPF application
- Stand-alone vs. browser-based (XBAP) WPF application

Module 3 UI user interface design and development

- Create Page Layout
- Use of Content Controls
- Use Items Controls
- What are Resources and how they are used

Module 4 User Interface

- Create consistent UI help styles
- Change the appearance of elements using templates
- Event Processing and Infrastructure Commands

Module 5 Unit Testing and Debugging

- WPF application testing strategy
- XAML debugging
- Processing Uncaptured Exceptions

Module 6 Simple Data Binding and Validation

- Basics of WPF Data Binding
- Create Data Binding
- Implementation of Property Change Notification
- Data conversion
- Data validation
- Design-time data display

Module 7 Data Binding on Collections

- Binding on a collection of objects
- Working with the ObservableCollection object
- Loading data from SQL Server database using Entity Framework and LINQ
- Use of Data Templates

Module 8 UI Behavior Improvements

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- Implementation of asynchronous processing
- UI implementation with fast response
- Working with the Task class
- Use the keywords async and await

Module 9 Localization and help for application users

- Localization and Globalization
- Implementation of User Assistance Features
- Ensuring User Accessibility Features

Module 10 WPF 2D graphics, multimedia and printing

- 2D graphics
- View images
- Add multimedia to WPF application
- Create and print documents

Module 11 Creating custom elements

- Basics of creating elements for WPF
- Create User Controls
- Create Custom Controls
- Control the appearance of elements using Visual States

Module 12 Attached Properties and Behaviors and WPF

- Implementation of Attached Properties
- Implementation of Expression Blend Behaviors, Triggers and Actions

Module 13 Animation in WPF

- Creating animations
- Use triggers
- Implementation of data visualizations

Module 14 Application class and application settings

- Application class
- Create and use application settings
- Application lifecycle

Module 15 WPF application configuration and distribution

- Distribution options
- Distribution of stand-alone WPF applications using ClickOnce technology
- XBAP application distribution

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